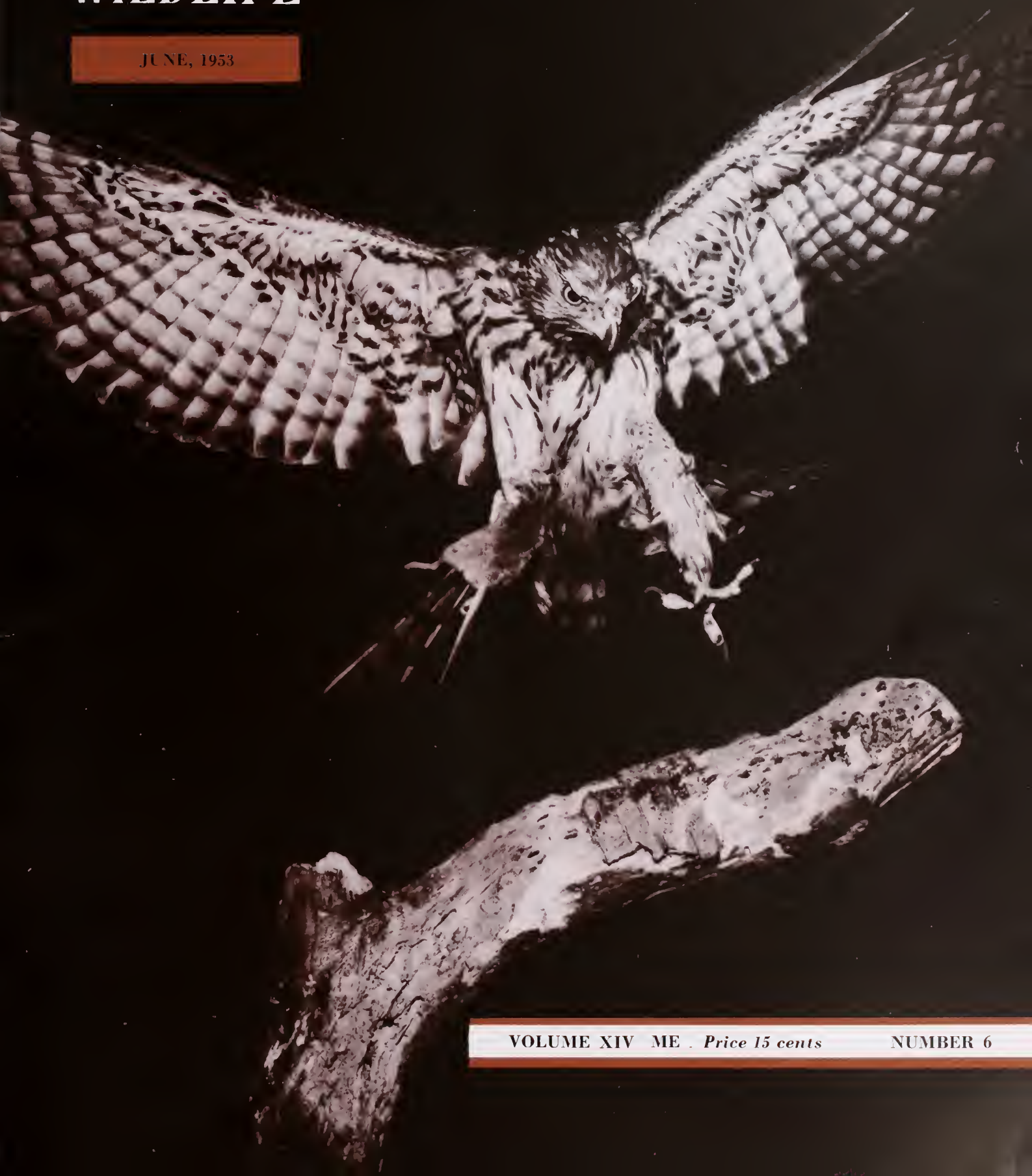


Virginia WILDLIFE

JUNE, 1953



VOLUME XIV ME . Price 15 cents

NUMBER 6



Commission photo by L. G. Kesteloo

Trout Triumph!

Two Richmond anglers pose with a prize six-pound rainbow
amid the swirling waters of Bull Pasture River, Bath County,
Virginia

Virginia WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia

A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

COMMONWEALTH OF VIRGINIA



JOHN S. BATTLE, Governor
Commission of Game and Inland Fisheries

COMMISSIONERS

BEVERLEY W. STRAS, JR., *Chairman*, Tazewell

CHAS. D. ANDREWS . . . Suffolk	DR. E. C. NETTLES . . . Wakefield
FRANK P. BURTON . . . Stuart	DR. WM. T. PUGH . . . Lynchburg
WM. C. GLOTH, JR. . . Arlington	DR. W. B. RAINS . . . Warsaw
T. G. HERRING . . . Dayton	T. D. WATKINS . . . Midlothian

I. T. QUINN
Executive Director

EVELYN M. PARIS
Assistant Executive Director

DIVISION CHIEFS

CHESTER F. PHELPS	<i>Game</i>
G. W. BULLER	<i>Fish</i>
LILLIAN B. LAYNE	<i>Fiscal</i>
J. J. SHOMON	<i>Education</i>
WEBB MIDYETTE	<i>Law Enforcement</i>

VOLUME XIV

JUNE, 1953

No. 6

In This Issue

	Page
School's Out	4
Multiple Use—Multiple Benefits	5
Canoe Trip on the Rappahannock	8
Fishing in Claytor Lake	11
Cooper's Hawk in Action	14-15
A Hook, Hackle, and Some Hair	16
Is Wildlife Fact-Finding Paying Off?	18
Economic Value of Fish and Wildlife	21
Field Force Notes	24
Drumming Log	25
Questions and Answers	26
Wildlife Essay Contest	27

Cover

"The Hunter's Return." A Cooper's Hawk shown returning from the hunt with a deer mouse for its diet

Commission photo by L. G. Kesteloo

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

Editor: J. J. SHOMON

R. R. BOWERS, *Associate Editor*

L. G. KESTELOO, *Photography*

F. S. McDANIEL, *Circulation*

SUBSCRIPTIONS: One Year, \$1.00; two years, \$1.50; three years, \$2.00. Remittances by check or money order to be made payable to the Treasurer of Virginia. Local game wardens will accept subscriptions or they may be forwarded direct to Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia.

VIRGINIA WILDLIFE is published monthly at Richmond 13, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to VIRGINIA WILDLIFE, P. O. Box 1642, Richmond Virginia. The editorial office gratefully receives for publication all news items, articles, photographs, sketches, and other materials which deal with the wise use and management and study of Virginia's inter-related, renewable resources: soils, water, forests and wildlife. Since wildlife is a beneficiary of the work done by state and federal land-use agencies in Virginia, editorial policy provides for full recognition of their accomplishments and solicitations of their contributions. Credit is given on material published. Permission to reprint is granted provided proper credit is given the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE and proper clearances are made with authors, photographers, artists and publishers.

Entered as a second class mail matter, November 10, 1947, at the post office in Richmond, Virginia, under the act of August 24, 1912

SCHOOL'S OUT!

YES, by the time this particular issue of *Virginia Wildlife* reaches you, the youngsters of school age will say "so long" to the classroom for another season.

It is a great time, this annual school closing, for it presupposes something which is distinctly traditional with our young and growing people. It is a happy time because boys and girls will have a long vacation and will, for the most part, do the things they want to do.

For parents, however, the summer vacation means added responsibility and not a few headaches. A few will say, "... yes, school's out and how I dread it," yet at the same time there is an inward gladness in the heart for the kids will be home again, even though a little mischief is bound to come.

And this brings us to the theme of our editorial: this business of keeping youngsters busy and happy and good during the summertime. Young people have boundless energy and must spend it some way. This so-called release of the adrenalin in their bodies can be accompanied by good deeds or bad deeds, or the in-between kind. It's all a matter of proper parental supervision of play time, of free time.

Without getting into the involved subject of juvenile delinquency, we all know that fewer young people would get into trouble if their free time were profitably utilized. Parents who complain of difficulty in managing their sons and daughters might very well take more time out to see that some form of planned or organized recreation is made available to them.

Planned and supervised recreation does not have to be of the expensive variety. While it is good to be able to send a boy or girl to camp—and summer camps are fine, and we should have more youngsters attending them—there are other things to do when families cannot afford the expense of a camp. Take the outdoors, for example. The outdoors is free to everybody. What better place for the youngsters to release their pent-up energy? Whether it be fishing, camping, hiking, plant and insect collection, bird watching or what have you,

the wholesome influence of the outdoors is there. It's there too in such varied and kindred forms that every child, regardless of location, should be able to take advantage of it.

For some concrete suggestions as to what parents can do to help keep their children out of trouble, we recommend the following:

1. Take a boy fishing whenever the opportunity permits and teach him the rules of good sportsmanship. And don't forget the girls too. They get just as much thrill out of hooking a bream as the boys. Remember also, no boy or girl needs a fishing license in Virginia under 16 years of age.

2. Suggest following a youth outdoor hobby. This could be archery, rifle marksmanship (supervised), bird study via bird walks, a collection hobby (insects, leaves, driftwood, rocks and minerals, flowers or anything that is found in the outdoors).

3. Plan an occasional campfire or picnic for the neighborhood kids. Let the youngsters help prepare the fire, the food, and learn something about outdoor cookery. City parks, state parks, national forests, highway waysides—almost all of them have facilities for either picnicking or camping.

4. Encourage the keeping of nature lists, such as bird lists, mammal lists, fish lists, and see how many different species of animal life and plant life the boy or girl can identify during the summer. Books and texts and leaflets are available on natural history almost anywhere, and many are free for the asking.

5. Last, but not least by any means, parents might look into the organized recreational programs offered by different organizations within their own communities. These are usually well planned and supervised and the youngsters need only to attend the programs being offered to inspire their interest.

It's going to be a long summer and we who have parental responsibility should see to it that our children's time is well spent. After all, as Goethe said, "The destiny of any nation at any given time depends on the opinion of its youth under five-and-twenty."

—J. J. S.



U. S. Forest Service photo

MULTIPLE USE--MULTIPLE BENEFITS*

By RICHARD E. McARDLE

Chief, U. S. Forest Service

LAST WEEK a young lady asked me what we do in management of the national forests. I said that we satisfy some of the people most of the time and most of the people some of the time, but always try to consider the interests of all of the people all of the time. I believe I only confused her, but my jesting reply got me to thinking again about the many different groups of people who use the national forests—people who rightly feel that they have a proprietary interest in these great public properties. Every citizen of this country owns a share of stock in the national forests—one share only, no less and no more. But that one share is immensely valuable. It is becoming more valuable with every passing day.

The national forests are unique public properties—distinctive not only because they encompass 181 million acres of timber and range, jutting mountain peaks, and uncounted lakes and streams, but more particularly because of the management objectives applied in their administration. Most public lands are managed primarily for a single purpose, or in some instances for a dual purpose. The national forests are managed for many purposes.

Today, more than at any time in the past, this concept of multiple-use management is being challenged. I do not recall seeing the challenge thrown down exactly as I have phrased it. But it can be seen none the less plainly in proposals to dedicate, legislatively or otherwise, large areas to one use or for the benefit of only one group of users. It can be seen in proposals to remove large areas from public ownership so as to benefit primarily one use or one group of users. It is evident in other proposals that would give this or that group exclusive or dominant rights in the use of these public lands.

A development such as this is inevitable in the growth of our country. We need to recognize the existence of this rapidly changing public-land use situation and to be aware of its implications. We need to look as far and as clearly into the future as we possibly can. This is no penny-ante game; the stakes are tremendous.

In the management of the national forests, we of the Forest Service are having to face up to this problem every day, in more places and in more and more different ways. This is particularly true of the western national forests. Here are former hinterlands that only a few years ago were remote and inaccessible. Here are areas whose values have jumped as population has increased.

* Presented March 10, 1953, at the Eighteenth North American Wildlife Conference, Washington, D. C.

as industrial and agricultural development has leaped ahead, as transportation and communication advances have erased barriers of space and time. The ever-increasing intensity of use of these national-forest lands brings conflicts that at times seem nearly impossible to resolve satisfactorily. Yet resolve them we must, for only by wise balancing of these diverse interests can these public properties be made to yield maximum benefit to all our people.

To help you see this picture more clearly, let me sketch for you some of the multiple uses of the national forests that by leaps and bounds are growing in volume and intensity.

Take fishing and hunting, for example. More than 2 million hunters and some 4 million fishermen used the national forests last year. We are wholeheartedly in favor of this use of the national forests and want to see it increase.

As a matter of fact, all kinds of recreational uses of the national forests are on the increase. Last year the national forests had 30 million recreational visitors. Ten years ago there were only 10 million. Some of these millions of people want only a place to picnic. Others want to camp overnight. Some want summer homes. A lot of people just want to put a pack on their backs and hike up and down hill. Some want to experience the fascination and deep-seated satisfaction that comes with penetration of a vast wilderness far from sight and sound of civilization. And recently national-forest winter sports use has been increasing at an almost unbelievable rate. The present need for ski runs and lifts and so on is something we failed to foresee a quarter of a century ago. It makes me wonder if today we are seeing future recreational needs accurately—even for only 10 or 20 years ahead.

At any rate, with better roads and more of them, with better automobiles and more of them, with a 5-day week, longer vacations and more leisure time generally—whatever the reasons may be—more and more and still more people are using the national forests for recreational purposes. That's fine. We like it.

And we are not alone in approving this use of the national forests. Measured in terms of dollars spent, outdoor recreation is one of the biggest businesses in this country. Think of the people who make some or all of their living by selling food and lodging, souvenirs and soft drinks, fishing tackle, golf clubs, gasoline, and a thousand and one other items to recreationists. Think of the many others employed in manufacturing these articles or in transporting recreationists here and there or in serving them in countless other ways. The national forests produce a big chunk of this business.

But to me the commercial aspects of national forest recreation are secondary to the opportunity for people to get away from the mental and emotional strains of present-day living. It is a safety valve which has great significance in keeping people healthy and happy—in helping them to keep a balance and a sense of values in a world increasingly beset with emotional strain. You can't put a dollar sign on this sort of thing, but we believe it is one of the great contributions the national



Harold M. Lombert, photo

The national forests are managed for many purposes; watershed protection, recreation, and timber. Last year more than two million hunters used the forests

forests make to the people who own them.

Now let's consider for a moment a quite different use of these same lands. More than half a century ago the Congress set forth, as a principal objective in establishing the national forests, the need to furnish "a continuous supply of timber for the use and necessities of citizens of the United States." For a great many years this use, like recreational use, was not very large. Today, as with recreational use, the picture has changed. The amount of timber cut on the national forests has doubled in less than 10 years. Receipts from sale of timber were \$64 million last year and will be even larger this year.

Harvesting national-forest timber under the sustained-yield principle has helped stabilize communities and local industries and has provided jobs for many thousands of people—not only in the wood-using industries but for butchers, bakers, doctors, lawyers, and merchants serving these industries and their employees. Local governments benefit too because 25 percent of all national-forest receipts go to the states for roads and schools in the counties having national-forest land.

We think this use of the national forests is all to the good. We want to see it increase and prosper.

There is still another substantial use of the national forests. Last year permits were issued to about 20,000 ranchers to graze some 3 million sheep and nearly a million and a quarter cattle and horses. Grazing fees total about \$5 million a year, and this income, too, is shared with the states and counties.

This dollar income, however, does not tell the whole story. Much national-forest range is high-mountain summer range, usable for only part of the year. The home ranches of many livestock owners are at lower elevations with only winter range. We try to work with these stockmen to fit the private and public range together so as to provide the year-around operation required for this industry. We believe that livestock grazing is a proper use of many national forest areas. By building up the grazing capacity of these ranges through reseeding and good management, we hope to

improve their value and the part they play in our whole agricultural and industrial economy.

There is another use of the national forests which in many respects is more important, more essential, than perhaps any other use. The basic legislation establishing these public forests provided, as a principal reason for their reservation in public ownership, the need to make certain of "favorable conditions of water flows." Our pioneer forefathers knew how important water is. It was the first thing they looked for when they selected a homesite or a place to establish a new community. As time passed, their children and great grandchildren hired other people to worry about their water supplies. It became a job for the superintendent of the city water works, not for the apartment dweller, the individual home or factory owner.

But today, we are again becoming aware—as individual citizens—of our water situation. In the past six months I have been in three cities where water-use temporarily was being restricted. I was in another city when the reserve supply of water was sufficient for only a few hours of use. There are towns, both east and west, where further industrial expansion depends on somehow finding an increase in current water

supplies. Most of you know about the great distances to which some cities are now reaching out for more adequate supplies of water—distances that only a relatively few years ago would have been considered incredible and probably impossible. These are not things that might happen; these are actualities.

No one knows precisely how much the national forests—and other public lands—are worth to the people of this country as major sources of clean, pure, usable water. I have seen estimates by competent authorities that, at current water prices, add up to hundreds of millions of dollars a year. I know of some national-forest watersheds that for water yield alone are estimated to be worth \$2,000 an acre.

But dollar value alone is a poor criterion. Water is something that we must have; it is worth whatever we have to pay to get it. There are other ways to measure the value of this use of the national forests. There are more than 1,800 communities—some are cities of several hundred thousand population—that are dependent on national-forest watersheds for their domestic and industrial water. Thousands more are partly dependent on the national forests. Many—I believe I could say most—of the major irrigated farm developments of the west depend on national forests for their water supplies. More than 600 hydroelectric power developments—including practically all of the major power projects in western states—depend on water from the national forests.

So I think you can see that the national forests are lands of many uses—and many users. The intensity of all these uses is increasing—and increasing rapidly.

As intensity of use increases we sometimes find one or more of these uses in conflict. It would be more accurate to say that the personal interests of the various groups of users conflict. The wilderness enthusiasts, and there are many of them, naturally want timber cutting and other commercial uses excluded on substantial areas. Timber users object to taking too much commercial-quality timber off the market. The argument, of course, turns on how much is too much. Hunters want more wild game, but the livestock people say that too much big game takes forage away from domestic livestock. Again, we come up against how much is too much? Irrigated land farmers and other water users are beginning to protest vigorously any use of national-forest watersheds that may jeopardize their water supplies.

There are conflicts, too, between surface and sub-surface uses. Development of the mineral resources of the national forests is legitimate, proper, and in the public interest. But this should be done with minimum disturbance of surface resources.

The practical workability of the multiple-use concept of national-forest administration is now being tested on a scale and to an intensity beyond anything we have experienced in times past. The Forest Service believes that many of the diverse uses of the national forests are reasonably compatible. If we had to deal with only one



Commission photo by L. G. Kesteloo

Of the 30 million recreation visitors to the national forests last year more than 4 million were fishermen. Outdoor-use of forests has trebled in the past decade

(Continued on page 20)

A Canoe Trip on the Rappahannock River

By O. H. SKEWES

"**W**HAR yer goin' in that thar thing?" queried the wizened old codger who sat on the bank of the Rappahannock River fishing for bluegills near Remington, Virginia.

"Fredericksburg!" was our laconic reply as we shot over the small riffles below the spot where he was fishing.

"Ye'll nivver git thar," he shouted as we sped out of earshot.

We laughed at his dire prediction then, but as our trip unfolded, we were more and more inclined to agree with the old gentleman's observation.

Now to digress for awhile.

"That thar thing" which the old codger referred to, was our fifteen foot Grumann all aluminum canoe in which we were attempting a trip from near Warrenton, Virginia, to Fredericksburg, Virginia, on the Rappahannock River.

Last winter, as the cold north winds blew, and the snow blanketed the ground, my son, Ronald, and I spent many happy hours planning our canoe trip. We proposed to put into the Rappahannock at the point where U. S. Route 211 crosses the river just four miles northwest of Warrenton, Virginia. From this point, we planned to journey to Fredericksburg—35 miles away by road, and countless more miles as the meandering Rappahannock flows. We deliberately avoided asking questions about the river as to its size, roughness, presence of falls, depth, etc., etc., as we wanted to enjoy the surprises of the unknown. We got our surprises in large king size doses!

On the morning of May 30, our dream trip began to take on the cloak of reality. By prearrangement, our good friend and neighbor, John Stroup, met Ronald and me at our house. John was to accompany us to the point of embarkation, and then drive my car back home. Then, John was to hold himself in readiness to come after us when we reached our destination and telephoned him. John had humored us along in our plans—but I shall always believe there was a doubt in his mind as to our sincerity in actually taking the much talked about canoe trip—which doubt was finally dispelled

only by the sight of our bright red canoe lashed securely to the top of my car in readiness for its journey to the river.

We arrived at the junction of Route 211 and the Rappahannock near the small hamlet of Waterloo, Virginia, at 8 o'clock A.M. We were in the water with a minimum of effort and a maximum of excited expectation at 8:30 o'clock. We gave our equipment one final check and shoved off. I shall never forget the last look I had of John's face before he was hidden from our view as we smoothly rounded the first bend in the

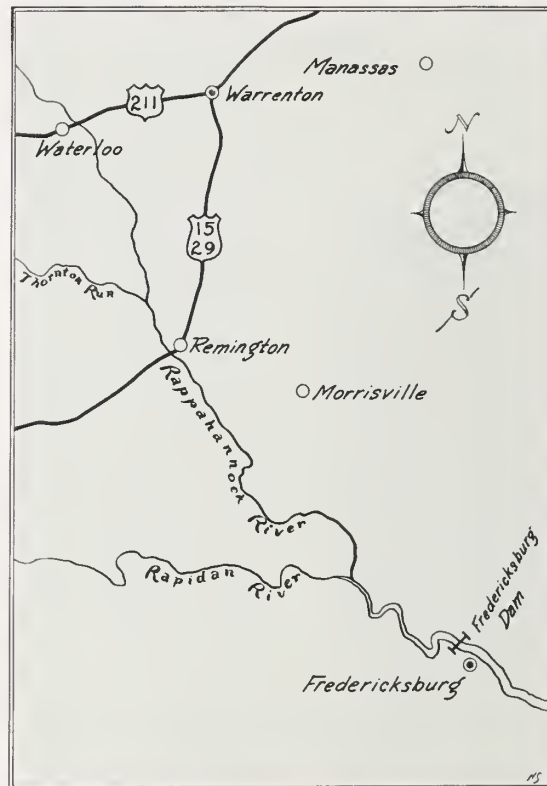
river. It was a look which combined disbelief—disbelief that we were actually embarking on such a trip, and fear—fear, I guess, that we would end up in some unforeseen tragedy.

It was a beautiful morning! The sky was slightly overcast, but the air was cool, clean and above all, it was invigorating. It was good to be finally on our way. The current was swift, and the river was unusually high, due, no doubt, to the week-long rain which had immediately preceded our trip.

The first few hours of our trip were spent absorbing the beauties of nature which constantly kept unfolding before us as we rounded each succeeding bend of the ever-meandering Rappahannock. Truly, this was the real way to travel and relax. No gas fumes, no horns blaring, no ominous

screech of brakes followed by the inevitable banshee wail of the onrushing ambulance or police car. This Indian mode of transportation would hardly meet the demands of 20th century progress, but it does give a man the opportunity to meditate and enjoy nature with its charms to its fullest extent.

Very shortly we came upon our first rapids or riffles. As we approached them, Ronald looked over his shoulder at me with apprehension. I don't believe he had too much faith in my ability as a canoeist although I had regaled him many times with stories of my canoeing experiences in Maine when I was his age. I could well understand Ronald's misgiving as we approached our first riffles, and could also appreciate his broad smile after we were safely through. As soon as I saw that smile, I knew that from now on he would be an in-



veterate canoeist.

On gliding silently around one bend in the river, we came upon a mother wood duck with twelve swimming balls of feathers that were her young brood. This duck reacted like all mother ducks the world over. Her first instinct was to protect her young. She attempted first to outdistance us. When that failed due to the slowness of the little ducklings, she hid the little ones among the weeds growing along the bank. Then mother duck went into her wounded duck routine. Ronald, in all his fifteen years, had never witnessed this ruse staged by a brood duck. He was amazed at the manner in which the duck gave her realistic imitation of attempting to fly with a supposedly broken wing. She would flop and flutter about 20 or 30 feet, ever away from her brood, enticing us to follow, which we naturally did since she was going downstream, and we were floating with the current. Ronald expressed concern over the possibility of the mother duck abandoning the ducklings. However, his fears were soon dispelled. After the duck had lured us nearly a quarter of a mile downstream, she suddenly forgot her "broken wing" and took off the water, gained altitude, and then wheeled gracefully back toward the spot where she had secreted her brood, satisfied in the knowledge that she had skillfully lured the hated men away from her young ducklings. We enjoyed her performance immensely.

At approximately 11 o'clock A.M. we noticed that the river ahead widened considerably. Upon paddling a 100 yards more, we saw the reason for the widening of the Rappahannock. It was being joined in its journey to the sea by Thornton Run, which has its headwaters in the Blue Ridge mountains, and which flows through the pleasant little hamlet of Sperryville on its way to join the Rappahannock. Thornton Run was also unusually swelled by the rains of the previous week, and it gave a person a feeling of frustrated dismay to see the terrific amount of good Virginia topsoil that was constantly eroded and swept wastefully out to sea.

Soon after passing the junction of the Rappahannock and Thornton Run, we paddled a few 100 feet up a very small tributary of the Rappahannock, and there stopped to have some lunch. It was while we were stopped here eating our sandwich and candy bar, that we became fully aware of the abundance of grey squirrels that inhabited the trees which bordered the river. We had seen many squirrels all along the river banks, but here they seemed to be in more concentrated numbers. We were interested in their antics, and they appeared to be watching us with equal interest. They chattered and scurried through the branches of the stately hickory and sycamore trees which were the most prevalent types growing in this region. Watching these great numbers of squirrels made us feel thankful that we lived in a



state which takes conservation of wildlife seriously, and thereby makes it possible to enjoy these furry phantoms for fall hunting.

We nosed our canoe out into the Rappahannock again as soon as we had finished our lunch. The river now seemed to be becoming more sluggish as though it were leveling off somewhat as it flowed through the farm country of Culpeper County. The trees now only bordered the river like a hedgerow, and beyond them stretched the rolling fields that have nourished the people of Virginia.

About three o'clock in the afternoon, we passed under the bridge made by U. S. Highways 29 and 15, crossing the Rappahannock two miles west of Remington. It was just below this bridge that we met our old fisherman friend mentioned at the beginning of this article.

Four or five miles beyond the Remington bridge, we began to understand the old codger's prediction about not reaching Fredericksburg "in that thar thing." Here we encountered our first serious navigation problem. The river at this point, and as far as we could see was filled with immense boulders which seriously hampered our progress. We were obliged to pull into shore, and guide our canoe bit by bit around the rocks by means of ropes attached to the bow and stern of the canoe. This naturally made our progress slow and tedious. I would play out the rope to its full length until Ronald grasped the bow of the canoe, and then I would walk farther down the river and Ronald would in turn play the rope out and I would grasp the canoe. We played this tedious leapfrog for a mile and a half. After going through this bad stretch of river, we had good smooth water for the remainder of the day, which for us ended at 7:00 o'clock P.M.

We decided to spend the night on an island which, roughly speaking, was located approximately due west of Morrisville. We soon made a roaring campfire, and cooked our supper, which consisted of weiners, pork and beans, and onions. It was simple fare but to us it tasted better than the sumptuous dinners one reads about being served at large banquets. After supper, we made a bough bed, turned our canoe over to form a partial shelter, and after a few minutes of storytelling and reviewing the day's events, we fell into a deep satisfying sleep.

We were up the following morning at six, eager to be on our way. So after a delicious breakfast of bacon and eggs, we shoved off on the second leg of our journey.

Soon after leaving the island where we had spent the night, we began to notice a marked change in the general topography of the land. The gently rolling banks of the river were giving way to steeper and rockier terrain. The trees were larger and more dense. The mountain laurel and the catawba rhododendron blooms contrasted their beautiful delicate pastel coloring with the dark foliage of the trees and other vegetation.

There was also a change in the river. It left the sluggishness of the farm land behind, and now picked up the swifter tempo dictated by the approach to the fall line. With the greater speed came more rapids—bigger and better rapids—which appeared at more

frequent intervals. Some of these rapids we were forced to portage around; some we "walked" our canoe through, and a few we rode out with a thrill and a prayer. There is a thrill that comes with canoeing down a rapid that is more exhilarating and exciting than riding the steepest roller coaster at Coney Island.

Late in the morning, we came to the junction of the Rapidan and Rappahannock Rivers. They join forces in a particularly wild spot of terrain, and in a boisterous manner amid tremendous rocks and boulders. However, it is a beautiful and spectacular sight to behold. Ronald and I both expressed a wish to try our luck canoeing down the Rapidan next year.

About a mile below the junction of the Rapidan and the Rappahannock, we happened to see a small animal swimming ahead of our canoe. Immediately we began speculating as to what type of creature it was. We mentioned coon, possum and mink, but when we drew nearer we saw that it was unmistakably the large flat head of an otter. As we came even closer, the otter took a deep dive which carried it out of our sight. It is rare to see an otter in the wild state in these times, and the glimpse we got of this otter made it a welcome addition to our mental catalog of various fauna seen on the trip.

A few hours later we came upon some men who were fishing from the bank of the river, and we inquired from them how far we were from Fredericksburg. They answered us that it was only about four miles farther down the river, and they seemed surprised to learn that we had come all the way from near Waterloo in upper Culpeper County.

Very shortly the river began to widen and become noticeably more sluggish. Up ahead we could see the tops of trees, but we could not see any tree trunks. Then it dawned on me that we were approaching a dam. It was the dam above Fredericksburg which is utilized by the Virginia Power and Light Company as a source of water for their plant in Fredericksburg. Normally the canal, which diverts the water from the dam to the power company's generating station, takes nearly the entire output of the river leaving little water to go over the dam. However, in this rain-swollen abnormal condition, fully a foot of water was flowing over the dam for its entire length. I shudder to think what would have happened to us had we been unfortunate enough to have been swept over the 20 foot dam to the rocks below.

Since we were on the south bank of the dam, which is to say the canal side, we were obliged to cross to the north side to make an easy and effective portage. We very discreetly paddled a few 100 yards upstream before attempting to cross to the other bank of the dam. We managed the portage without incident by 4:30 o'clock.

A couple of miles below the dam, and a few 100 yards from our destination, it happened! We made an error in judgment, hit a rock, and into the churning water we went! I held on to my paddle, and I felt myself turning a couple of flips under water. The next thing I knew, I was standing on a rock two-thirds submerged in water.

(Continued on page 20)



FISHING in CLAYTOR LAKE

By HELTON L. HALE

Commission photos by L. G. Kesteloo

CLAYTOR LAKE, near Dublin, Virginia, is one of the largest fresh water lakes in Virginia. It is a recreational area without peer, where any fisherman can catch fish. Three kinds of bass, wall-eye pike, crappie and sunfish wait by the thousands for the sportsman who likes fishing at its best.

This article about Claytor Lake, its fishing and my thoughts about how to catch fish, is written with a threefold purpose in mind. First, I would say it is to extol the virtues of Claytor Lake. The second is to study the know-how of fishing—that is, touch upon the few things we know about fishing, as we will apply them here. The third is to put what we have stated into practice with the actual fishing and the results.

Claytor Lake is a clear body of water with seldom a trace of color. It averages about a mile in width and up to and more than 100 feet in depth. It is 20-odd miles in length with numerous coves and inlets. Thanks to our farsighted Commission of Game & Inland Fisheries it can now be fished the year around, with the minor exception that black bass may not be taken in April and May. Boats and motors and baits may be had at the Claytor Lake State Park boat docks, and other boat docks as well. For me it is a pleasure to drive up to one of these boat docks and have a boat, motor and baits ready by one of the attendants with such a minimum loss of time.

Why anyone would go to some of our surrounding states and lakes solely for fishing is something that can only be explained by saying that this individual has never tried Claytor Lake. What we mean by trying Claytor Lake is to give it the same chance to show you what it has to offer that you give other favorite spots and places.

At the boat dock you will find an excellent place to gather such preliminary information as to what the fish have been biting; what particular spot is especially hot today; the barometric pressure and water temperature. This information can be gathered while loading the fishing gear and accessories. You can also find out the altitude so that you can set your own barometer.

After leaving the boat dock, you may travel for miles and miles or pick a close-in spot near sheer cliffs or

gradual sloping banks. You will see that Claytor Lake offers thousands of extremely beautiful scenes as well as real fishy-looking spots. These many views will give you some trouble in finding a starting spot. You may like an inlet where springs are running into the lake or perhaps a cove that is sheltered and the water as calm and smooth as glass. It is possible to troll for hours always in new waters, or the channels may be fished, if you so wish.

One of the major problems for out-of-staters is that of the two or three day fishing license, as some surrounding states have. This is something to which I believe our Commission of Game & Inland Fisheries has given much thought. Someday I hope we will have a two or three day Virginia fishing license for non-residents for a dollar or so, especially for lake fishing.

Now let's say we are out on the water and ready to fish. The barometer reading is good. Fish will be active today. Why? Well, when the barometer is high the atmospheric pressure is pushing down on the water to an extent greater than normal. This added pressure makes available more oxygen to dissolve in the water. Fish breathe oxygen. The more oxygen for fish, the more active the fish. If the barometer is steady at any reading for a time, the fish will be found deep. Fishing will be found to be good during any sudden changes in the barometer reading, either high or low. Fishing is supposed to be poorest when the barometer is at a low reading.

Now we take a thermometer reading of the water. If the water is hot the fish will be relatively deep. If the water is cold the fish will be in shallow depth because the warmest water is near the top. Remember, if you will, that water has quite an up and down movement. At the temperature of approximately 39° F. water has its greatest density and moves downward. From about 39° to 32° F. water expands. This explains why ice always freezes on top of lakes and streams. This same up and down movement is going on at all temperatures. You can see why a thermometer is handy in helping to decide at what depth to begin fishing.

If the water is calm, start fishing at any likely looking spot and keep moving until you find fish. If the water

is rough and rolling you can always find the fishing spots easier. This is why some of the best catches are made during rough and windy days. Remember that fish have a tendency to go against the current.

We have now found the fish and know at what depth they are. Can we make them bite? I am of the opinion that fish can be caught at any time, *if* the fisherman can put the right combinations together. This combination of the right things at the right time is the fun of fishing and the element of chance cannot be eliminated. However, different fishermen have taken a lot of known facts together and are outstanding in the taking of fish. These fishermen have eliminated a lot of the chance of fishing.

Fish must eat. They can pick their food, usually, and the time to feed. But fish can be made to bite out of sheer annoyance and continued aggravation. Many people are able to use this trick in catching fish.

I have been fishing for pike and drifted over a nesting spot for bass. The bass seem to hit anything you throw in the water, and the only thing to do is move on in the quest for pike.

It is possible to fish with very inexpensive tackle. Even a cut pole, a piece of string and a hook can be used with some success. However, it is a pleasure to fish with good equipment. I have read somewhere that with a spinning rod it is possible to cover several hundred times the water that can be covered with a fly rod or casting rod. I believe in using all three rods on different occasions. In the last year or so, I have been learning something about spinning and I do think it has many attractive features. For trolling and heavy plugs a casting rod is the thing for me. For live bait and medium to small spinners and bugs, a good fly rod with a tapered line and tapered leader is hard to beat. You can really whip up the water with this combination and wet or dry flies. A spinning rod will do everything well, they say, and it is a nice feeling to get a fish on

this extremely light tackle.

If we use all the tricks we know; study the water and fish and weather; use casting rod, fly rod and spinning rod; use plugs, flies, bugs, minnows and worms; fish hard and long hours for, say, ten days in fair weather or foul, we should have a fairly good indication of what a certain lake will deliver. Here are my findings for a ten day period. *All fish caught were released.* You can probably do much better. Keep a record this year and see.

First Day. Barometer high in the morning. In the afternoon the barometer high and falling. Very windy. Raining. Very disagreeable. Water temperature 54°. Fish caught between 12 and 20 feet.

Catch: 1 large pike—21½ in.
11 smallmouth bass
8 smaller pike
2 yellow perch
2 crappie

Baits: Practically everything. In the order of preference: (1) Worms, (2) Minnows, (3) Spinners.

Second Day. Barometer high and rising all day.

Catch: 7 perch
1 crappie
2 pike
4 smallmouth bass

Baits: (1) Worms, (2) Minnows.

Third Day. Barometer high and steady.

Catch: 5 blue cats
22 pike
9 smallmouth bass

Baits: (1) Minnows.

Fourth Day. Barometer high and falling. Water temperature 55 degrees.

Catch: 2 blue cats
3 smallmouth bass
7 panfish

Baits: (1) Worms.

Fifth Day. Barometer high and falling.

Catch: 4 pike
2 yellow perch
3 smallmouth bass
1 largemouth bass
2 blue channel cats

Baits: (1) Worms, (2) Minnows.

Sixth Day. Barometer low and falling. Weather terrible.

Catch: 12 pan fish, fished close-in
2 smallmouth bass

Baits: (1) Worms, (2) Minnows.



After leaving the dock at Claytor Lake, you may travel for miles or pick a close-in spot for fishing at its best

Seventh Day. Barometer low and falling.

Catch: 13 smallmouth bass
1 largemouth bass
1 crappie
1 bream
6 pike

Baits: (1) Minnows, (2) Spinners, (3) Worms.

Eighth Day. Barometer low and steady.

Catch: 4 largemouth bass
3 pan fish
3 smallmouth bass
4 blue cats
2 pike

Baits: (1) Plugs, (2) Minnows, (3) Spinners,
(4) Worms.

Ninth Day. Barometer low and rising steadily.

Catch: 6 crappie
8 smallmouth bass
5 largemouth bass
16 pike

Baits: (1) Plugs, (2) Minnows, (3) Spinners,
(4) Worms.

Tenth Day. Barometer low to high, rising steadily.
Water temperature 56 degrees.

Catch: 27 smallmouth bass
8 pike
1 yellow perch

Baits: Popping bugs and Spinning Rod lures.

Why don't you take a few days out to fish in Claytor Lake? It has the fish for you. If you want to go after large fish, try these baits in the order that I have them listed—which is the reverse of the order as I used them. I did not catch any large fish—my largest was a 2½ lb. pike. When I found I could catch fish on one bait, I would change then and there to experiment around.

- (1) Large plugs, diving and floaters.
- (2) Bass bugs, pork rind and spinners.
- (3) Artificial spinners and flies.
- (4) Minnows.
- (5) Worms.

My thanks go to Pat Massey of Christiansburg, Virginia, who insisted on my doing this study, and who fished with me for two days of the ten. Pat is a purist for casting rod and plugs, floaters and deep runners—both of which he used to great success. Many thanks also to M. J. Pennington at Claytor Lake State Park, who, by the way, catches more fish in Claytor Lake than any person I know, and who greatly facilitated my getting in and out. I want also to thank Ted Ward, of the Commission of Game and Inland Fisheries, who spent a day with me when I took a goodly number of bass.

SEEN ANY TURKEYS?

WE'RE going to "talk turkey." We need your help. In fact, without it, we're pretty much behind the well-known eight ball. If you're interested in bringing the turkey back to its former high numbers in our eastern turkey range, or interested in establishing turkeys in all sections of this commonwealth from which they have been absent many years, here's how you can assist us, and yourself.

LET THE GAME COMMISSION, RICHMOND 13, VIRGINIA, KNOW OF ANY TURKEY NESTS YOU SEE, OR HEAR OF, THIS SPRING. Now you don't want to sear any hen from her nest deliberately. That won't help your sport one bit. But, if accidentally you flush a bird from her nest, count the number of eggs in it and drop us a post card letting us know the date, county, number of eggs and any other information you care to give us.

If you find a nest that has hatched out, drop us a line with the same information. Or, if you find a nest that has been broken up, or one that the hen has deserted, let us know.

LET US KNOW OF ANY TURKEY BROODS YOU SEE, OR HEAR OF, THIS SUMMER. We're interested in finding out how many chicks live until the fall season. If you're lucky enough to have a brood using your fields perhaps, if you're sure it's the same brood, you'd like to jot down the dates you see the hen with her young and the number of chicks she has with her each time. If you're a mail carrier, or if you drive

some regular route daily, or weekly, you could do this easily without too much trouble. But, if you feel that this takes too much time, just drop us a post card when you see a brood and let us know the date and the number of poults you saw. Remember, we'll put to good use any information you will give us.

LET US KNOW OF ANY TURKEY GANGS YOU SEE, OR HEAR OF, THIS FALL OR WINTER. We'd like to know when you saw them, where you saw them and how many birds were in the gang. (We know you'll remember any you see this coming hunting season.) Just drop us a line.

LET US KNOW OF ANY YELLOW-LEGGED TURKEYS YOU SEE. Yes, we said yellow-legged. You see we're marking some turkeys we release with a yellow dye on their legs. This is done to help us keep track of their movements. If you see any such birds and drop us a post card letting us know when, where and how many birds you saw, it will be of great help in the restocking program.

You have our promise that any, and all, information you send us will be kept confidential. We won't tell anyone else that you have turkeys on which you're keeping an eye. That would neither be fair nor would it be good sportsmanship.

Please help us help you. The success of your Commission's turkey program rests mainly on your shoulders. The future of turkey hunting in Virginia largely depends upon your co-operation.



(1) A low crouch begins "take-off"



(2) Body rises, wings are spread. Note length and power of legs



(6) Mouse is borne aloft by winged hunter



(5) Fierceness and defiance at close view



(8) Right talon grabs for perch

COOPER'S HAWK

These unusual high speed, strobe light reveal the performance of a Cooper's hawk. Though destructive to game, it is a valuable rodent destroyer.



(3) Strong wingbeats give hawk quick altitude



(4) A sudden dive-bombing attack surprises a lone deer mouse. Note braking action of wings



(7) Prepares for one point landing

(9) Wings begin to fold on landing. Note wink

(10) A quick look around before . . .

(11) . . . the meal begins



IN ACTION

photos by L. G. Kesteloo
hawk in a routine food
and songbirds, this hawk

A Hook, A Hackle, and Some Hair

By C. I. VAN CLEVE

Commission photos by Kesteloo

CLEAR, cold water spilled over the rocks as it raced downward to a deep pool below. The water was as clear as a crystal ball and as cold as the wind-swept snow of winter. As it reached the pool, it eddied there as if pausing a moment to reflect the blue of the sky and mirror the cliff and trees that lined its banks. It reminded one of the marvelous beauty and simplicity of nature. Suddenly, as if by magic, a fly lit upon its surface, riding the water with all the grace of a ballet dancer. Slowly it drifted about over the surface of the pool in wide, graceful circles before being drawn into the main current and carried downward. As it passed a protruding rock, there was a flash of silver as a brook trout rose up from the bottom and struck; struck with all the savage fury that had made the trout a much sought-after game fish, sought by sportsmen down through the years. Here then was the thrill that comes to the heart of every fisherman: the thrill that accounts for many hours spent on treacherous trout streams, for the many dollars spent on fishing tackle, and for the many and various excuses that men think up to go fishing in anticipation of just this very moment. The strike of a trout!

But in this particular case it was slightly different. The fisherman was not only thrilled by the strike; he was also thrilled because only the night before the fly that rode the water so gracefully and was so successful in luring a trout to strike, was nothing but a bare hook, a few feet of silk thread, and a feather or two. With these materials at hand he had designed and tied that beautiful Coachman, using all the skill and knowledge at his command to make it a perfect fly, perfect in the color of the materials, balanced properly, and perfect in workmanship so it could withstand the whip of a long line, and the savage, slashing strikes of the trout. So here at last was success!! Yes, doubly so—a successful fly and a successful catch. Is it any wonder that many men take the time and patience to tie their own flies?

There have been many books written on the subject of fly-tying and I know that it is impossible for me to add any knowledge to an art that dates back over the

centuries. Let's pull back the curtains of the past and trace some of the history of this art.

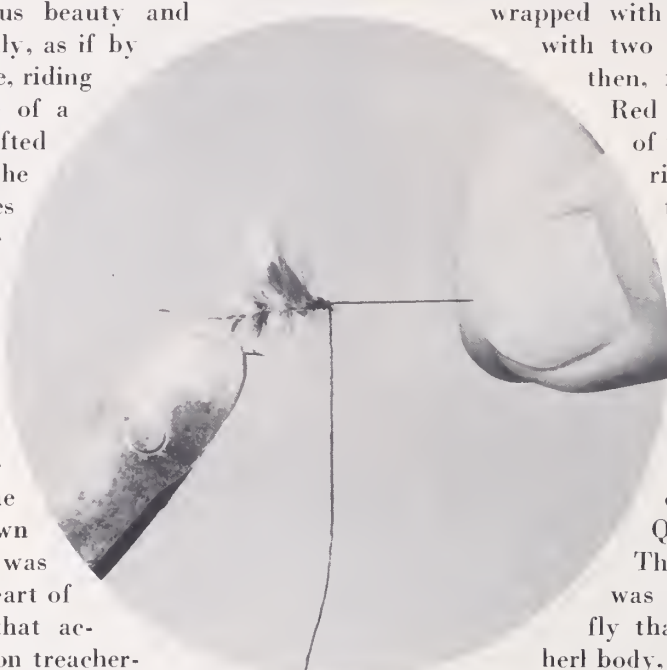
A Greek writer, by the name of Aelian, in the third century wrote that fish were taken from a stream, by the name of Astraeus, located between Beraea and Thessalonica—the fishermen using a hook wrapped with a lock of reddish wool and with two cock feathers attached. This, then, is probably the origin of the Red Hackle fly, for the author writes of native insects that fell into the river the size of bumblebees and the color of wasps. This fly was evidently tied to resemble these insects.

In England, in the early part of the eighteenth century, there was a man by the name of Tom Bosworth, who was coachman to the royal family of England under the reigns of George IV, William IV and Queen Victoria.

This coachman of the royal family was also an angler and he tied a fly that had a bronze-green peacock herl body, brown hackle and white wings.

This fly is known today as the Coachman. Since then, there have been many variations of this fly, the most famous being the Royal Coachman. This fly was first tied in America by a John Hailey, who had a shop at 320 Henry Street in New York in 1878. John Hailey was not the originator of this fly but merely tied the fly for a customer who liked the Coachman but thought it too frail and suggested that a band of red silk be wrapped around the middle of the body to strengthen it. After the fly was tied, a group of Mr. Hailey's friends were discussing a name for it and a Mr. L. C. Orvis of Hartford, Connecticut, suggested that, as it had a band of scarlet silk it was a very fine Coachman, so why not call it a "Royal Coachman."

In 1820, in Scotland, there was a famous author who wrote under the name of Christopher North. Some of his works are known under the title of "Recreations of Christopher North," a book that should belong in every collection on angling. Christopher North was Professor John Wilson of Edinburgh University. It is recorded that on a fishing occasion Professor Wilson



tyed a fly using the petals of a buttercup, the thread of his sock, and some grass, and from this came the fly we know today as the Professor. It is usually made with a body of buttercup yellow silk, hackle, either black or red, and wings from a Mallard feather.

Tracing the origin and history of fly-tying would take volumes but it wouldn't be right to end this until we investigate what one of the world's most famous anglers had to say of fly-tying. Izaak Walton, author of "The Compleat Angler" published in 1653, writes as follows:

"I confess, no direction can be given to make a man of dull capacity able to make a Flie well; and yet I know, this with a little practice will help an ingenious Angler in a good degree: but to see a Flie made by an Artist in that kind, is the best teaching to make it, and then an ingenious Angler may walk by the River and mark what Flie fall on the water that day, and catch one of them, if he see the Trouts leap at a flie of that kind, and then having alwaies hooks ready hung with him, and having a bag also, alwaies with him with Bears hair, or the hair of a Brown or Sad-coloured Heifer, hackles of a Cock or Capon." He continues to describe the different materials that it takes to create a fly and then continues to write:

"I say, having those with him in a bag, and trying to make a Flie, though he miss at first, yet shall he hit it better, even to such a perfection as none can well teach him; and if he hit to make his Flie right, and to have the luck to hit also where there is a store of Trouts, a dark day, and a right wind, he will catch such a store of them, as will encourage him to grow more and more in love with the art of Fly-making."

There are only three tools that one needs to tie flies. First, the vise to hold your hooks. Although many famous flytyers still continue to hold the hook in their fingers while tying the fly, I prefer the vise. Second, a bobbin that will hold and dispense your silk. Here again, some tyers prefer to use the silk as it comes off its original spool and to throw half-hitches around the material to hold it in place. By using a bobbin one can hold the material in place with the weight of the bobbin making it much easier and faster. Third, one should have a sharp pair of small scissors.

Now, as to the materials, as Izaak Walton wrote, they

range all the way from Bear's hair to the hackles of a Cock. The most common body materials are chenille, wool, peacock herl and silk floss. The hackles of a fly come from the necks and saddles of roosters but the higher grade hackles are from the game cocks. The wings of a fly can be made from many different bird feathers, either wing or breast feathers being best. Duck feathers, particularly the wing feathers, are the ones most used on dry flies because of their water-resistant qualities. A cake of beeswax to wax your silk, which is very important, and a bottle of waterproof glue to finish off the head of your flies and to seal your knot, complete the list of materials.

Once you start tying your own flies you will find out what a fascinating art it is. You will also find out that you will acquire a sizable store of knowledge of the insects that inhabit the area of your favorite trout streams. You will spend many pleasant hours trying to duplicate a certain fly or insect that you noticed trout striking at. You will prob-

ably produce some of the weirdest imitations of flies that could be imagined and will be constantly trying them out. You will derive a satisfaction from this art almost as great as that of fishing and will probably spend many a cold winter's day tying flies and dreaming of a clear cold stream tumbling down the mountain, in such a hurry to get to the sea that it never slows down but occasionally will linger in a deep pool as if to regain its breath for its onward journey to the sea.

Then the time will come on this very stream, on some spring day, when all nature has covered her bare breasts with a fresh coating of green, and the waters of the stream will have that clear blue look that permits you to see into the underwater world. Then you will see the lightning-fast streak of the trout as he breasts the current moving from rock to rock. You will come across that deep pool and approach it as if your very life depended on you reaching the edge without being seen. Slowly you will creep up the side of a giant boulder and whip your line out over the pool, watching intently as the fly settles gracefully on the water and marvelling at its balance and beauty. Then with the swiftness of lightning a trout will strike! What more could one want?



WILD TURKEY BOOKS WANTED

Anyone having a copy of "The Wild Turkey in Virginia," by Mosby & Handley, which he would like to sell, please advise the Education Division, Commission of Game and Inland Fisheries, Richmond 13, Virginia. These books are constantly requested by biologists and conservationists, but they are out of print and are no longer available from the usual sources. If you have one you do not need, please let us know with the price you would like to receive for it. Your name will be placed upon our list of sources for this publication.

Is Wildlife Fact-finding Paying Off?

By HENRY S. MOSBY, Unit Leader

*Virginia Co-operative Wildlife Research Unit**

Commission photos by Kesteloo

THE wildlife of the United States is now recognized as "big business" if you measure it in terms of the number of customers or in dollars. For example, the approximately 28 million sportsmen of the United States paid something like 75 million dollars for hunting and fishing licenses last year alone. A recent survey in Ohio showed that approximately 71 million dollars were spent by sportsmen of the Buckeye State in the pursuit of hunting and fishing and that they harvested wildlife products worth 14 million during the year of 1947. Statistics are dull, we know, but any way you consider these figures wildlife—and its administration—is definitely in the class where it requires careful scrutiny of all costs and results. All industries of similar magnitude review periodically their fact-finding and investigational work to determine whether it contributes its part to the prosperity of the enterprise. Let's take a look at the fact-finding part of the wildlife business and see whether it will stand a similar examination.

It may be of interest to note that the field of professional wildlife management is only several decades of age. The first institutions offering training for men who desired to go into the wildlife "business" on a professional basis did not open their doors until about 1930. The professional Wildlife Society was not formed until 1937. Thus, in less than 25 years, wildlife management has become established as a profession, and the proper administration of this resource placed on a more scientific basis by men trained to assemble and evaluate facts as they relate to wild animal populations.

A majority of the states are depending upon fact-finding crews to assemble information upon which to base their hunting and fishing regulations each year. These crews study game and fish populations and determine whether the sportsmen are harvesting the proper proportion of the available surplus. If they are not, then the investigators recommend changes in the regulations to insure that the sportsmen take all, but not more than, the removable harvest. For example, deer investigations of West Virginia and Virginia showed that in certain sections of each of these two states deer were becoming too abundant and that an any-deer season was needed to remove a greater proportion of the deer herd. This recommendation was accepted for two reasons: first, to remove excess animals from the deer range so that the habitat could continue to support a maximum number of deer; and,

second, to have the hunters, rather than starvation, remove the excess animals. Rosebery, in his fishery investigations at Claytor Lake, found that sportsmen could and should take a larger part of the fish present in this impoundment; as a result of his work, fishing regulations on Claytor Lake were greatly liberalized several years ago. It is encouraging to note that field investigations are now being used to a much greater extent than at any time in the past as a basis for establishing the hunting and fishing regulations. These fact-finding efforts of game and fish men should assure that wildlife populations will be handled on a more logical basis in the future.

What are some of the accomplishments of the professional fact-finders, other than assembling information for hunting and fishing regulations? Of course, a mass of data on the life history, food habits, migratory habits and routes, methods of aging, nesting success, normal rates of survival, and similar information have been assembled on most of the important game and fish species in the United States. Such information contributes greatly to the sound management and utilization of wildlife as a renewable natural resource. However, most sportsmen are interested mainly in concrete examples of fact-finding that have proved to be of direct benefit to themselves and to their enjoyment of hunting and fishing. Only a few will be mentioned due to space limitations.

Work in Alabama and in many other states has demonstrated that farm ponds can, under proper management, produce more fish than can be harvested normally by hook and line fishing; in some instances, as many as 300 to 400 pounds of fish per acre can be produced in these ponds each year. Similarly, work in Virginia has showed that the stocking of trout streams with fingerling trout is not a practical measure in so far as producing fish for the creel of the sportsmen. Thus, Virginia now stocks only larger fish and does not expect many of these catchable-sized trout to carry over in the 134 trout streams from one year to another. Fishery workers in Virginia and elsewhere can predict, as a result of their investigations, that fishing will be excellent in most impoundments for several years after flooding, but that fishing success will decrease thereafter.

It has been rather adequately demonstrated that the bounty system of predator control is an ineffective and costly method for the control of any wildlife species. The use of the bounty system as a means of increasing the take of game by the sportsmen has been discredited by fact-finding men in a large number of states. Thus, the money saved by abandoning the bounty system

*Release No. 53-4 of the Virginia Co-operative Wildlife Research Unit, Virginia Polytechnic Institute, Virginia Commission of Game and Inland Fisheries, Wildlife Management Institute, and Fish and Wildlife Service, co-operating



Fact finding requires training of personnel to do the job. Most of the professional wildlife workers of the present day have received special training for their job



Wildlife students are constantly searching for better plants to use in encouraging food production for game animals in the habitat or home in which they live



By trapping, marking, and releasing game, the wildlife investigator may determine whether disease is the cause of death and, if so, what steps may be taken to prevent such losses



Constant tab must be kept on the condition of the deer herd. A series of weights and other measurements tell the wildlife worker a great deal about the condition of the range from which the deer was removed

can be devoted to more profitable undertakings so far as the sportsmen are concerned. The release of game as a means of producing an additional surplus to be taken by the sportsmen is another aspect of wildlife management which has been subjected to a considerable amount of investigation. At the present time, it seems that the release of most farm game species for the purpose of increasing the bag of the hunter is biologically unsound and economically not feasible. For example, one of the northern states found that, if it wanted to increase the state-wide bag of rabbits by releasing imported rabbits for the hunter to remove during the hunting season, this program would necessitate an increase in license fees of \$6.33. Quail have been released in numbers for years, but investigations have showed that seldom, if ever, do captivity-reared quail produce any results that are of benefit to the sportsman.

In some of the western states, fact-finders have demonstrated that the use of watering troughs in semi-arid country can increase the number of quail to a marked degree. In the deep South, the use of controlled fire can increase the quail population appreciably by

removing underbrush and encouraging the growth of desirable quail foods. Shrub lespedezas and multiflora rose have been widely used throughout the Southeast as plants designed to meet the food and cover requirements of farm game. Fact-finders are now busy trying to determine whether the use of these plants on a large scale will increase materially the production of farm game such as quail and rabbits. Other land management practices designed to increase the population of sporting species of game and fish are under investigation and evaluation by fact-finders in most of the 48 states.

Work at V. P. I. and elsewhere has shown that at least 40 percent of early fall quail population may be taken by the sportsmen without harm to the quail. Investigators have shown in a number of states that the deer herds must be periodically reduced, preferably by sportsmen, if they are to be managed intelligently. As many as 140,000 deer have been removed in a single state during one season of hunting with actual benefit to the deer herd. It took the wildlife investigators a long time to convince the sportsmen that such a harvest was good conservation; in fact, many sportsmen will



Today's game technicians can tell a great deal about the condition of a deer herd by a dentition study



In order to determine the exact cause of wildlife declines all of the facts must be known

not accept such facts if such facts run contrary to their opinion. Thus, substantiating well-known procedures, such as the necessity for removing a larger segment of the deer herd at intervals, will continue to concern many wildlife fact-finders for years to come.

The intelligent management of our wildlife is mandatory if we are to continue to meet the demands of the increasing number of hunters and fishermen. Such management must be based on well established facts. The sooner all concerned realize that facts—not opinions and old wives' tales—must be the basis of our work with

game and fish, the more nearly we will be able to produce a harvestable supply of game and fish.

So, the next time a wildlife problem is discussed with your sporting friends, start the discussion with the question: "What are the facts in this case?" Perhaps you may be surprised at how few facts are available; those facts which we have must be used to best advantage. Continuous fact-finding in wildlife management is mandatory as in all other big businesses; it has paid dividends to the sportmen and it *must* be continued.

A CANOE TRIP ON THE RAPPAHANNOCK

(Continued from page 10)

I looked back from my precarious perch, and saw that the canoe was wedged on its side between two boulders. I could also see that Ronald was hanging on desperately to the far side of the canoe. I yelled at him to stay where he was, but the force of the water was too great for him, and it pulled him under the canoe. He soon bobbed to the surface, and shot past me like a bowling ball in full flight. I don't mind saying these were anxious moments for me, as they would be to any parent who sees his son being carried away by a raging current. Ronald is a good swimmer, but he was tremendously hampered by being fully clothed and having the terrific current to contend with. I said a silent prayer of thanks when I saw that he finally made the bank about a 100 yards downstream. After steadying my nerves a while, I plunged into the river, swam and floated my way to shore. All our gear was lost.

We left the canoe where it was until the following day. I would not have attempted to fight that current again that day for 10 canoes.

About a quarter of a mile from the point of capsizing, we found a house from which I called John to come after us. An hour later he was there, and we were on our way home—thankful that we had not fared worse.

Summarizing, I would like to say that I heartily recommend the trip by canoe from Warrenton as far as the Remington bridge to both novice and expert alike. No portaging will be required between these two points, and one is rewarded by excellent fishing, beautiful scenery, and wonderful canoeing. Below Remington to Fredericksburg, the portaging, and the rapids make it difficult and discouraging for the novice, but for the true canoe enthusiast the scenery and the thrills to be had by far exceed the hardships.

MULTIPLE USE—MULTIPLE BENEFITS

(Continued from page 7)

group of users, I suppose it would be somewhat easier to agree on a reasonable course of action. But since we must consider the interests of all the people, we usually find ourselves in the middle. If I were rewriting the title of this paper I would be tempted to phrase it "Multiple Use—Multiple Benefits—Multiple Responsibilities." I can assure you that some really distinguished headaches result from being in the middle of so many opposing pressures and responsibilities. Stewardship is not easy.

But I want to make it completely clear that I think being in the middle is not only inevitable; I think being in the middle is exactly where we ought to be. I believe that our inability to completely satisfy each and every group of national-forest users is a definite sign of success

in doing the job assigned to us. When each group is somewhat dissatisfied, it's a pretty good sign that no one group is getting more than its fair share.

The guiding principle laid down for us nearly 50 years ago still hits the mark. I think you know it. We were instructed, you will remember, to so administer these national forests that they would yield the "most productive use for the permanent good of the whole people, and not for the temporary benefit of individuals or companies"; and "where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run." That is still the guiding policy of the Forest Service, and I hope it always will be.

Economic Value of Fish and Wildlife

By WILLIAM M. WHITE

Economist, Office of River Basin Studies, U. S. Fish and Wildlife Service

*What's the dollar value of our fish, our wildlife? Can we
say how much a bass or a quail is worth? Here is one
attempt at an answer to a difficult and perplexing question*

AS A RULE, hunters and fishermen give little thought to the possibility or desirability of assigning a dollar value to sport fish and game. Wildlife administrators, on the other hand, are constantly faced with the problem of deciding just how much these wildlife resources are actually worth. This question pops up whenever wildlife agencies are deciding how public funds should be spent for fish and wildlife, or whenever they are appraising proposed developments by other public agencies which may have harmful effects on the resources they are charged to protect.

It is a comparatively simple matter to determine the dollar value of commercial fishing and fur trapping. In this case, the products are sold through business channels and they can be evaluated in terms of market prices.

As for sport fish and game, the problem of determining a dollar value becomes quite different. Ordinarily, game is not sold in the market and when it is, the price merely represents the value of the meat and is comparable to prices for other similar forms of meat. In some cases, hunting and fishing privileges are sold by a landowner. Fees for such privileges represent actual market prices and indicate the value placed on these sports by certain sportsmen. These fees are directly comparable to those received by a landowner for cattle grazing leases and if significant would be reflected in the market value of the land. These are instances in which landowners receive more income from the sale of hunting privileges than they would receive by using the same land for agricultural purposes. As a rule, however, the land involved is of low agricultural value and contains a high concentration of game during the hunting season. In most cases, special fees are not charged and the game on private land is considered to be the property of the public at large who are permitted by the landowners to harvest it merely by purchasing a state license.

The fact that game species are not sold commercially does not mean that they do not have economic value. On the contrary, the fact that they provide meat,

recreation, and enjoyment to the public, demonstrates the existence of such value. Translating this value into a dollar figure is another matter.

There is no question but that sport fish and game have a meat value to the sportsman. This value can be considered equal to the price he would pay at the neighborhood store for meat of comparable quality. However, this is not the only value he obtains from hunting or fishing, naturally. If it were, he would be wasting his time and money. Although the cost of his state license may be low, it by no means represents the total cost of his hunting or fishing trip if he is a typical sportsman. He usually purchases a variety of specialized equipment and spends money for guide service, dogs, transportation, meals, and sometimes lodging in connection with his trip. When all of these costs are totaled, he will find that he is paying much more for his meat than the selling price at the corner store. The value of hunting and fishing to the sportsman must be at least equal to all of the money he spends in connection with these sports; otherwise he would find some other use for his money.

The money spent by the hunter and fisherman also represents revenue to a number of business establishments which are wholly or partially dependent on this source of income. Manufacturers of sporting arms and ammunition, and fishing tackle find their entire market among the hunting and fishing public. So also do many professional guides and operators of hunting and fishing lodges. To a lesser degree, manufacturers of boats and outboard motors, tents, sleeping bags, and other camping and sporting equipment are dependent on revenue derived from these sportsmen. In some localities, hardware stores, gasoline stations, and hotels depend on them for a substantial portion of their income.

Since hunter and fisherman expenditures are widely used by fish and wildlife administrators in demonstrating the importance of hunting and fishing, surveys have frequently been conducted to determine the size of such



U. S. F. W. S. photo

Dollars spent by sportsmen are widely pointed out by conservation departments to demonstrate wildlife values



U. S. F. W. S. photo

"During the year ending June 30, 1952, 17,129,896 fishing licenses . . . were sold by the 48 states"



U. S. F. W. S. photo

"It is a comparatively simple matter to determine the dollar value of commercial fishing and trapping"

expenditures. A 1947 study by Ohio revealed that on the average each hunter spent \$41.88 and each fisherman spent \$56.95 in connection with hunting and fishing in the state that year. A 1949 study by North Carolina showed average expenditures of \$51.36 per hunter and \$88.70 per fisherman. A similar study in the state of Washington showed an average expenditure of \$200 by each licensed hunter or fisherman in the state during 1950. This large figure is probably explained by the variety of hunting and fishing available in the state, the long, open seasons, the quantity of equipment purchased, and the mild climate which permits fishing or hunting throughout most of the year. California estimated that its hunters spent an average of \$100 each during the 1951 season. The same state also estimated that its more than half-million hunters spent more than \$50,000,000 during the year and bagged a total of 19,865,000 pounds of game with a meat value of at least



Commission photo by Shoman

Sport fish and game have a meat value to the sportsman. Value here is almost equal to similar foods found at the neighborhood store

\$15,000,000. Localized studies by the Fish and Wildlife Service in Montana and neighboring states have indicated expenditures of more than \$100 per license holder. A number of the other states have conducted similar studies and have obtained comparable results.

Comprehensive surveys of hunter and fisherman expenditures have never been conducted for the United States as a whole. However, the number of licensed hunters and fishermen is known. During the year ending June 30, 1952, 17,129,896 fishing licenses and 13,902,428 hunting licenses were sold by the 48 states. Revenue from the sales of these 31,030,324 licenses amounted to \$73,603,207. In addition, there is an unknown but sizable number of hunters and fishermen who are not required to purchase state licenses. For example, most coastal states do not require licenses for salt water fishing while many states permit landowners to hunt on their own property without purchasing a state

license and do not require minors to purchase licenses.

From information available, it appears that expenditures per license holder vary considerably from state to state. It also appears that the average expenditure per license holder probably ranges from \$50 to \$200. We might assume a round figure of \$100 as a reasonable estimate of the average expenditure per license holder in the United States. If the figure of 31,030,324 license holders is multiplied by \$100, the total expenditures by hunters and fishermen in the United States would have been over \$3,000,000,000 during the year ended June 30, 1952. This is probably a fairly good estimate of the money actually spent in connection with hunting and fishing. Except for the license fees, the bulk of this money is spent at the retail level for guns, ammunition, fishing tackle, camping equipment, other equipment, and gasoline, meals, lodging, and sundries.

Hunting and fishing expenditures in Virginia might be estimated in a similar manner. License sales in the state amounted to 749,701 for the same period and provided revenue of \$1,177,333. At \$100 per license holder, the total expenditures by hunters and fishermen would have been about \$75,000,000 for the year ended July 30, 1952. As most of the money would have been spent at the retail level, the total would represent a substantial portion of the total retail sales in Virginia during that period.

These figures represent the importance of hunting and fishing to the sportsmen and to business in Virginia and in the United States as a whole. While it would be foolish to claim that the elimination of hunting and fishing would represent a business loss of the magnitude implied above, such a situation would certainly have serious effects on any businesses catering exclusively to hunters and fishermen and would require extensive readjustments by other businesses.

The Federal Government is frequently faced with the problem of evaluating fish and wildlife resources. It is particularly important in connection with the program for river basin development. The Fish and Wildlife Service investigates water-use projects proposed for construction or license by the Federal Government for such purposes as irrigation, flood control, navigation, and hydroelectric-power production. The Service prepares reports describing the effects of such projects on fish and wildlife resources and recommends measures for preventing damages to and improving conditions for these resources. Since the construction agencies justify their

projects by showing an excess of dollar profits over costs, the Service frequently assigns dollar values to the expected gains or losses to fish and wildlife.

Profits or "benefits" from these projects are generally compared with costs on an annual basis. In other words, the net value of the increased production expected to occur each year with the project in operation is compared with the total annual cost of the project. The Fish and Wildlife Service estimates the increased or decreased harvests of the commercial and game species expected yearly with the project in operation and assigns dollar values to these harvests.

The values assigned to the commercial fish and fur harvests represent average prices expected to be received by the fishermen and trappers during the life of the project. The values assigned to the game species represent

average costs expected to be incurred by the sport fisherman and hunter for each pound of fish or unit of game taken. These are sportsman expenditure figures expressed in terms of the harvest. They range from approximately 65 cents a pound for rough fish to \$4 a pound for trout and from about \$1.35 for a rabbit to more than \$300 for a moose. The apparent preciseness of these figures is caused by the fact that they have been adjusted to allow for expected changes in retail price levels over the



"Really, Dad, it's so easy!"

long-run future. They are somewhat lower than current prices.

The Fish and Wildlife Service uses the sport fish and game values as an indication of the value of hunting and fishing to the sportsman. It recognizes that the primary value of these sports is not measurable in monetary terms, but uses the expenditure values as the only appropriate device yet developed for advancing some type of dollar figure for use in connection with the appraisal of water-development projects. It has been pointed out from time to time by construction agencies and others that it is not proper to compare net income from productive activities such as irrigation farming and hydroelectric power generation with dollar losses or gains to hunting and fishing when these latter values are expressed not as net income derived from the sale of hunting and fishing but as gross money spent by sportsmen for all types of goods and services used in connection with hunting and fishing. As yet, no sound procedure has been developed for determining hunting and fishing values in a manner more directly comparable to the other values involved in a water-development project.



Field Force Notes

JEFFERSON TROUT STOCKING ANNOUNCED

Paul Sundheimer, acting forest supervisor, Thomas Jefferson National Forest, discloses that some 17 trout streams in the Jefferson National Forest were stocked with trout, both brooks and rainbows, in addition to those supplied by the Commission of Game and Inland Fisheries. These streams are as follows:

From Wytheville Hatchery

Stream	County	Brook	Rain-bow
Hounshell, Cressy Br.	Smyth	500	500
Hurricane Branch & W.	Smyth	750	250
Fork Nicks Creek	Washington	700	2300
Straight Branch	Scott & Wise		1500
Stony Creek			
Burns Creek and			
Little Stony	Scott & Wise	750	750
Straight Branch	Scott		1500
Nobusiness	Giles	700	800
Dry Run	Wythe		2500
Lick Creek	Bland & Smyth		1000
		3400	11,100

From New Castle Rearing Station

Hurricane Branch	Smyth	1500
North Creek	Botetourt	1000
Stony Creek (White Rock)		
North Fork Stony)	Giles	2000
Dismal Creek	Giles	1500
Roaring Run	Botetourt	1250
Cove Creek	Craig	1000
Barbours Creek	Craig	1000
		2250
		6000
		8500

SPRING HOUSE CLEANING FOR BASS

Carl Ramsey, manager of the Commission's largemouth bass hatchery at Stevensville, King and Queen County, reports that his annual spring house cleaning at the hatchery went off without a hitch.

With the spawning season at that

Bass are transplanted from wintering ponds to brood ponds in metal containers



time just around the corner, Ramsey and his assistants seined out the 1,600 three-year-old brood bass from their winter quarters and placed them in shining clean larger ponds where they nested and spawned during late April and May. The spawning ponds ranged in size from four to 13 acres.

These brood bass were those set aside from the thousands stocked last fall throughout eastern waters. They spent the winter in smaller ponds on the 103-acre hatchery site, where in addition bream and crappie were reared.

FRONT ROYAL STATION DONATES TIME TO CONSERVATION

Radio Station WFTR, Front Royal, Virginia, is to be commended for its part in the furtherance of conservation and conservation edu-



Members of the WFTR roundtable: Left to right, Harold Hines, Roy Myer, Warden James Simpson, Billy Smith, Lem Richards, and D. C. Daugherty

cation, so reports the Commission's State Game Warden J. W. Simpson from Warren County.

Simpson reports that Station WFTR donates one-half hour of its radio time each week to the Hook and Trigger Roundtable, a discussion among those directly associated with and those interested in conservation.

Moderator for the weekly program is D. C. Daugherty, president of the Warren County Fish and Game Protective Association. Local merchants also get into the act of helping the cause of conservation by donating

incentive prizes to those sending in the best questions from the listening audience.

It is through such unified co-operative acts that conservation will eventually become a by-word among the citizens of Virginia, Simpson stated.

ALBINO WOODCHUCK KILLED NEAR HARRISONBURG

Conservation Officer T. J. Starrett of Hinton, Virginia, reports that a rare pure white ground hog was killed last March in Rockingham County by Elmer Seerist of Harrisonburg.

Seerist reported that he had shot the albino woodchuck near Massanetta Springs, Virginia. He put it on display at Paul's Trading Post on South Liberty Street in Harrisonburg and hunters from the vicinity came in droves to view this unusual specimen. Although rare, albinism in woodchucks and practically all mammalian life occurs now and then.



Elmer Seerist with albino "chuck" he killed



GABRIELSON RECEIVES ALDO LEOPOLD MEMORIAL AWARD

Dr. Ira N. Gabrielson, president of the Wildlife Management Institute, was presented the Aldo Leopold Memorial Award, conservation's highest honor, on March 10 before 875 persons including 151 members of Congress at the annual banquet of the 18th North American Wildlife Conference. The Wildlife Society, donor of the award, called Dr. Gabrielson's accomplishments as a fearless administrator of wildlife resources and as a relentless foe of those who would exploit the natural resources of the continent an outstanding example of selfless devotion to conservation's greatest principles.

Dr. Gabrielson began his career in 1912 as a school teacher of biology at Marshalltown, Iowa. Three years later, he entered the U. S. Biological Survey as a biologist and rose, in 1935, to chief of the federal conservation organization. As chief of the Biological Survey and the first director of its successor, the Fish and Wildlife Service, he nurtured the newly organized co-operative wildlife research unit program and fostered the development of national wildlife refuges. He retired from government service in 1946. Author or co-author



Dr. Gabrielson

of five full-length books and many scientific papers and popular articles on ornithology and wildlife conservation, Gabrielson is chairman of the Emergency Committee on Natural Resources. He has served as chairman of the International Union for the Protection of Nature and the American Delegation to the International Whaling Conference.

BESLEY APPOINTED EXECUTIVE DIRECTOR-FORESTER OF A. F. A.

Lowell Besley, dean of the University of British Columbia's Forestry School, has been named executive director-forester of the American For-



Lowell Besley

estry Association effective July 1.

Dean Besley's appointment marks the completion of the 77-year-old forestry association's current reorganization program. He is 43 and a native of Baltimore, Md. He received the B.S. degree in agriculture (forestry) from Cornell University in 1931. A year later he graduated from the Yale University School of Forestry with an M.F. degree, *cum laude*. Following teaching assignments in the forestry schools of Pennsylvania State College and West Virginia University, he went to the University of British Columbia in

1948 to head and organize that school's forestry department into one of the finest forest schools in North America.

Mr. Besley has a broad background of experience in both the United States and Canada. His outstanding academic career in North American forestry schools has been supplemented by work in both the public and private forestry fields, including posts as forester for the West Virginia Agricultural Experiment Station; field assistant for the Maryland State Department of Forestry; field assistant for the Northeastern Forest Experiment Station of the U. S. Forest Service; research specialist at Duke Forest, Duke University; technician at the Appalachian Forest Experiment Station; executive secretary for the West Virginia State Planning Board; forestry consultant for The American Forestry Association; consultant for C. D. Schultz and Associates, forestry consultants in British Columbia; field assistant for Franklin W. Reed, Maryland consulting forester; and chief-of-parties for the management inventory of the Canadian Western Lumber Company.

Dean Besley sees the dynamic pattern of forestry achievement now being set by federal, state, and private agencies as closely allied programs.

RED ANT DENUDES 90,000 ACRES OF RANGE

The red harvester ant has completely denuded 90,000 acres of public rangeland in the Big Horn basin of Wyoming, reports the Bureau of Land Management. The harvester ant forages 60 to 80 feet to collect grass seed, preventing normal grass re-seeding. The Bureau of Land Management is experimenting with new poisons in an effort to control the insect.

Wildlife Questions and Answers

Ques.: Does anybody know just how deep a duck can dive, and if so, which duck can dive the deepest?

Ans.: The Old Squaw is believed to be the deepest diving duck, and they have been caught accidentally in fish nets 180 feet below the water surface.

Ques.: I have heard that some people eat muskrats, and if this is true wouldn't there be the same danger of disease as in eating rats?

Ans.: The muskrat is of high commercial value as a food animal and can be purchased in almost any southern market. However, the muskrat is not a rat as the name indicates and is as clean an animal as there is, being solely a vegetarian. It is an amphibious rodent.

Ques.: If the sparrow hawk is such a predator on birds, why don't most game departments declare a bounty on it and kill them off?

Ans.: Despite the name given this swift and beautiful bird, its main diet is made up of grasshoppers, not birds.

Ques.: Is it true that the eagles here in Virginia prey on the osprey, and if so do they eat these birds?

Ans.: The eagle does prey on the osprey by making it drop the fish it has caught. When these plundering outrages become intolerable the ospreys in the vicinity gang up on the eagle and drive it from the neighborhood.

Ques.: How much timberland do we still have in the United States?

Ans.: The total forest land in the United States is approximately 630 million acres, but because of improper treatment much of it is unproductive or only partially stocked with timber.

Ques.: Do both birds and mammals tend to prefer males for their leaders?

Ans.: While in many instances bands of mammals are led by females, birds nearly always prefer a male leader.

Ques.: How extensive are the roots of most trees? I have several trees in my yard and the roots get into my drains 50 feet away. Is it possible that the roots are more extensive than the upper branches?

Ans.: The roots of most of our trees are more extensive than the upper branches. In fact, with most plants, except those that grow in the swamps, there are more underground parts than parts above the ground.

Ques.: Why do the eggs of most wild birds always hatch at the same time if these same eggs are usually laid one at a time?

Ans.: Most birds lay only one egg a day, and some lay an egg every other day, but the brooding does not start until the last egg of the clutch has been laid, which causes an all-at-once hatching.

Ques.: What is the Key deer and how big an animal is it? Is it true that it is almost extinct?

Ans.: The Key deer is a small deer which lives in the Florida Keys. Now down to a pitiful few in number, this animal is only 28 inches high and weighs about 50 pounds. Valiant efforts are being made to save this species from extinction.

Ques.: Is it true that handling of toads will bring about warts on that part of the body which touches them?

Ans.: Certainly not. This is one of those old superstitions arising from the warty character of the toad itself. While toads do give off a slightly irritating exudate, the substance is powerless to cause warts.



"That worm is really giving Homer a battle"

Ques.: What is the average growth rate of the carp?

Ans.: At one year of age, the carp is only 9 inches long and weighs approximately one-half pound; at two years, 12 inches long and one and one-quarter pounds; at three years, 15 inches long and about two and one-quarter pounds; and at four years, 20 inches long and five and one-half pounds.

Ques.: We have a number of hummingbirds around our house each summer and would like to know what kind they are. They all look just about alike, but probably include several species.

Ans.: Chances are good that all of these birds are of the same species, inasmuch as there is only one hummingbird in North America east of the Mississippi, the ruby-throated hummingbird. More than 500 species occur in South America, but this is the only one on this continent.

Ques.: Is it true that rabbits are not the only animals that carry tularemia, or "rabbit fever"?

Ans.: Yes, it is true. Cats, dogs and rats, as well as other animals, carry the disease. Of 225 cases observed in the Charity Hospital of Louisiana, only 176 were traced to contacts with rabbits.

Ques.: Is there a way to rid a private pond of nuisance turtles without draining it and cleaning them out?

Ans.: Try putting out floating set-lines. Attach a thin copper wire to an air-tight can. Let it extend to within a few inches of the bottom. Put on a strong hook and bait it with fish or meat. Set the can afloat. Even the big turtles can't get away from these floaters or break the wire—a feat easily accomplished when it is attached to something solid.

Ques.: Is it necessary to split the tongue of a crow to make it talk?

Ans.: No indeed, and such actions are most inhumane, causing the crow to suffer undue pain. Crows can sometimes be taught to talk, but this bird produces its vocal sounds within the body from the syrinx, not the tongue.

Ques.: How can you tell a lady earthworm from a gentleman earthworm, so that one will know which to keep for breeders?

Ans.: Every earthworm is both male and female and is capable of laying eggs to reproduce its own kind. It cannot, however, fertilize itself.

Ques.: Since the English sparrow is our most abundant bird, which bird would rank second in this distinction?

Ans.: While most people assume that the English sparrow is our most abundant bird, actually the robin holds that distinction. The sparrow probably ranks about second in abundance.

Ques.: I have heard that bats have many obnoxious habits, such as snarling themselves in women's hair. Is this true?

Ans.: Superstitions are the basis for many "facts" known about our wildlife, and among them is the untrue belief that bats snarl themselves in women's hair.

Ques.: Which of the six warden supervisory districts had the most cash award winners in the Sixth Annual Wildlife Essay Contest, and how many did the top district have?

Ans.: The George Washington District took the greatest number of cash awards in the contest with a total of 14. Harry Johnson is the supervising warden for this district.

Pass In Review Of



(1) Commission Executive Director Quinn greets winners on arrival in Richmond. Left to right: James Pittman, Jr., Mr. Quinn, Edward Poole, Don Hancock, Marjorie Hall, Douglas Owen, Shirley Ann Stanley, and Faye Brown



(2) Winners are taken on a guided tour of the Capitol

(3) A Radio broadcast was part of the program

Commission photos by L. G. Kesteloo



(4) Charles McNett, Jr., homebound 10th grade winner, received his check earlier at his home in Alexandria from Governor Battle

(5) Mrs. E. E. Rush receives \$40.00 participation prize in behalf of the Wylliesburg School which had 100 per cent of its students entered in the contest

(6) Don Hancock receives his award of \$50.00 at Capitol

(7) Douglas Owen recites his essay at contest luncheon



(8) Commissioner "Uncle Tom" Herring greets youngsters at luncheon, while Walter Griggs, Richmond I. W. L. A. Chapter president, looks on



(9) Paul "Pop" Peters, president of the Virginia Division of the Izaak Walton League, says a few words in behalf of the League



(10) I. T. Quinn, speaker for the day, expounds to the group, and "it was that wide between the eyes."

Highlights in the Award Presentation Ceremonies SIXTH WILDLIFE ESSAY CONTEST



WHAT DO YOU KNOW ABOUT

Virginia's Wildlife?

READ!

VIRGINIA WILDLIFE

Magazine

LEARN!

Your Hunting and Fishing Laws

KNOW!

About Game and Fish in Virginia

Subscribe Now!

One year \$1.00

Two years \$1.50

Three years \$2.00

Special rates for sportsmen clubs and other organizations